

REMARKS

In response to the Office Action mailed November 17, 2009, Applicants hereby request reconsideration of the rejections based upon the claim amendments and arguments submitted herewith. Claims 1-8, 20-28, and 30- 36 were last presented for examination, of which all were rejected, with the following issues being raised:

1. Claims 1-7, 10, 14, 15, 17, 18, 21, 22, 24, 33, and 36 were rejected under 35 U.S.C. § 102(a) as anticipated by U.S. Patent No. 5,158,005 to Negishi et al. ("Negishi");
2. Claims 11-13, 34, and 35 were rejected under 35 U.S.C. § 103(a) as obvious over Negishi;
3. Claims 1, 2, 10-18, 21, 22, 24, and 33-36 were rejected under 35 U.S.C. § 103(a) as obvious over Negishi in view of U.S. patent application publication No. 20030065250 in the name of Chiel et al. ("Chiel");
4. Claims 8 and 9 were rejected under 35 U.S.C. § 103(a) as obvious over Negishi in view of U.S. Patent No. 4,875,469 to Brook et al. ("Brook");
5. Claims 20, 25-28, 31, and 32 were rejected under 35 U.S.C. § 103(a) as obvious over Negishi in view of U.S. Patent No. 3,976,057 to Barclay;
6. Claims 20, 25-28, 31, and 32 were rejected under 35 U.S.C. § 103(a) as obvious over Negishi in view of Chiel, and further in view of Barclay;
7. Claims 23 and 30 were rejected under 35 U.S.C. § 103(a) as obvious over Negishi in view of U.S. Patent No. 1,928,368 to Coffey.
8. Claims 23 and 30 were rejected under 35 U.S.C. § 103(a) as obvious over Negishi in view of Chiel, and further in view of Coffey.

By this Response, Applicants have canceled claims 1-8, 20, and 25-26, amended claims 10 and 11, and added new claims 37-49. Following the amendments, claims 10-18, 21-24, and 37-49 are pending in this application, with claims 10 and 37 being independent.

New claims 37-49 find support at least in original claims 25-28. These new claims are patentable over the prior art of record for at least the same reasons as stated below with respect to claims 10-18 and 21-24.

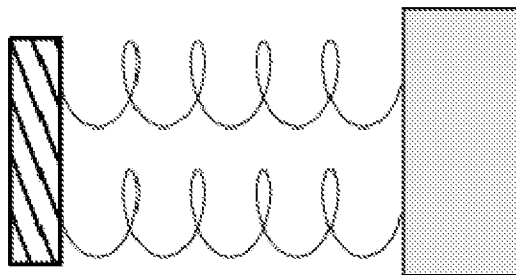
Anticipation Rejections

Claim 10 was rejected as anticipated by Negishi. Anticipation requires that each element of the claim is disclosed in the cited prior art reference. As amended, claim 10 recites “an inner bladder configured to be pressurized by a pneumatic source and to expand in a radial direction when pressurized”, “radial expansion of the inner bladder induces the braided material to contract the ends longitudinally”, “a mechanical device coupled in parallel with the inner bladder”, “the muscle actuators are configured to be separately pressurizeable”, “a knee brace”, and “a foot support”. Negishi does not disclose any of these limitations.

As is shown clearly in Fig. 3b of Negishi, one end of the spring is secured to the cylinder member 22, while the other end of the spring is fixed to the clamp sleeve 18. (Column 4, lines 46-55). In this configuration, the spring is coupled in series with the inner bladder, not in parallel. The terms “coupled in series” and “coupled in parallel” are terms of art which are well understood by those of ordinary skill in the relevant mechanical arts. For clarification, two springs, which are representative of any mechanical objects, are shown coupled in series between a mass, on the right, and a fixed anchor, on the left, in this first simple graphic:



Two springs are shown coupled in parallel between a mass, on the right, and a fixed anchor, on the left, in this second simple graphic:



The Examiner is invited to review the following web pages, from which these graphics were taken:

<http://scienceworld.wolfram.com/physics/SpringsTwoSpringsinSeries.html>:

<http://scienceworld.wolfram.com/physics/SpringsTwoSpringsinParallel.html>.

Thus, Negishi fails to disclose a mechanical device coupled in parallel with the inner bladder.

Negishi also discloses that the inner bladder expands only in the longitudinal direction, and does not expand in any significant way, if at all, in the radial direction. Specifically, Negishi states:

“Therefore, it is understood that the elastic extensible member hardly deforms in radial directions in comparison with its axial movements. In other words, the actuator ... does not expand in radial directions with exception of the axial movements. Accordingly, *the actuator needs no space for accommodating expansion in radial directions* as sir-bag type actuators of the prior art.” (emphasis added) Column 4, lines 31-39.

In other words, any expansion in the radial direction exhibited by the inner bladder disclosed in Negishi is incidental, and this incidental expansion is most certainly not sufficient to induce “the braided material to contract the ends longitudinally”.

Finally, Negishi discloses a single actuator, and does not disclose any system incorporating such actuators. The recitations in amended claim 10 of “the muscle actuators are configured to be separately pressurizeable”, “a knee brace”, and “a foot support” are part of a specific implementation with multiple actuators that is not disclosed in Negishi.

For each of these reasons, Negishi does not anticipate amended claim 10.

Claims 14, 15, 17, 18, 21, 22, and 24 were also rejected as anticipated by Negishi, and each ultimately depends from claim 10. Where Negishi does not anticipate amended claim 10, it also does not anticipate any of these dependent claims.

Obviousness Rejections

Claims 10-18 and 21-24 were rejected as obvious over Negishi alone or in combination with additional references. As indicated above, Negishi does not teach or disclose all the limitations of amended claim 10. Further, in each combination cited in the rejections of the Office Action, the additional references fail to teach or disclose one or more of the recitations discussed above from amended claim 10. As such, the cited combinations of references do not render any of claims 10-18 and 21-24 obvious.

Conclusion

For the foregoing reasons, Applicant requests withdrawal of the objections and reconsideration of the rejections.

The undersigned believes no extensions or additional fees are due with this response. However, if an extension is needed or a fee is due, please consider this a request therefor and charge Deposit Account No. 03-2775, under Order No. 09049-00004-US1, from which the undersigned is authorized to draw.

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Respectfully submitted,

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